

## NISTTech

### METAL-INSULATOR-SEMICONDUCTOR (MIS) DEVICE

NIST Docket No. 14-002

#### Abstract

NIST researchers have invented a metal-insulator semiconductor (MIS) photodiode that operates in an electrolytic environment and is capable of **efficient energy conversion** or **high positional sensitivity for detection** of a discrete light source or chemical species.

#### **Four New Aspects of Our Invention Compared to conventional MIS Photodiodes**

1. Processing of insulating layer with rapid thermal annealing (RTA)
2. Discontinuous metal layer allowing insulator to be exposed to the electrolyte
3. Bilayer metal structure (**relevant for energy conversion**)
4. Operation of MIS device in the presence of an electrolyte (**novel for photodetection**)

#### Inventors

- Moffat, Thomas P.
- Esposito, Daniel

#### References

- Serial No. 14/269,411

#### Status of Availability

This invention is available for licensing exclusively or non-exclusively in any field of use.

Last Modified: 02/02/2016